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March 6, 1995

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

VIA MESSENGER
Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: Second Notice of Inquiry, IC Docket 94-31

Dear Mr. Caton:

This letter will serve as the Comments of the Intelligent Transportation Society of America ("ITS America") in the above-referenced proceeding. By its Second Notice of Inquiry in this Docket, the FCC, inter alia, seeks further comments on candidate topics for inclusion on the final agenda for WRC-97 and the preliminary agenda for WRC-99. Preparation for International Telecommunication Union World Radiocommunication Conferences (Second Notice of Inquiry), FCC 95-36 (January 31, 1995) at paras. 95-100. Among the topics under consideration for the WRC-97 and WRC-99 agendas identified by the FCC is the issue of international spectrum allocations for Intelligent Transportation Systems ("ITS").

ITS America is a non-profit educational and scientific organization whose purpose is to coordinate and promote the research, development and deployment of ITS in the United States.¹ With a membership comprised of federal, state and local government, private industry, and academic interests, ITS America is a public/private partnership and serves as a utilized Federal Advisory Committee to the United States Department of Transportation ("USDOT").

Over the past five years, ITS America has served as the focal point for public and private sector cooperation in enabling the expeditious deployment of ITS services and products throughout the U.S. In adopting the Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA") Congress established as a national priority the implementation of a nationwide Intelligent Vehicle-Highway infrastructure.² Among other goals, Congress clearly articulated its expectation that ITS services and technologies would save lives and improve traffic safety, reduce traffic congestion, improve environmental quality particularly in non-

¹ The views expressed herein are those of ITS America and are not necessarily shared by each of the individual members of the Society.

² Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. 102-240, §6052

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attainment areas under the Clean Air Act and enhance mobility and economic productivity. In addition, Congress determined that U.S. leadership in the development and deployment of ITS technologies would enhance U.S. industrial and economic competitiveness "by establishing a significant United States presence in an emerging field of technology."

In 1992, ITS America published a Strategic Plan for the implementation of ITS systems within the United States that has been recognized by the FCC and many others as authoritative. ITS America has participated in the on-going ITS Architecture development program under the auspices of the United States Department of Transportation ("USDOT"), has coordinated with USDOT the preparation of a National Program Plan and has promoted at every turn consensus on the deployment of an ITS infrastructure in the U.S.³

At the core of the challenge facing the ITS community, of course, is the attainment of suitable communications links to ensure the timely aggregation of ITS information and the expeditious and accurate delivery of that information throughout the ITS communications systems. The ITS community is committed to operating within the framework of the National Information Infrastructure, and to using, where appropriate, existing communications infrastructure and service providers.

The FCC has been a key partner in encouraging the timely introduction of ITS services in the U.S. ITS America commends the FCC for its leadership in recognizing the many important public benefits of ITS services and products in this and other Dockets. Indeed, the FCC has clearly stated its commitment to ITS:

³ The National Program Plan identifies twenty-nine specific user services that will be addressed within the national ITS infrastructure. These user services generally are defined in seven categories: (1) travel and transportation management (e.g., traffic control, emissions testing and mitigation, en-route driver information); (2) travel demand management (e.g., pre-trip travel information, ride matching and reservation); (3) public transportation operations (e.g., public travel security, public transportation management); (4) electronic payment services (e.g., electronic toll services); (5) commercial vehicle operations (e.g., hazardous material incident response, on-board safety monitoring, automated roadside safety inspection); (6) emergency management (e.g., emergency notification and personal security, emergency vehicle management); and (7) advanced vehicle control and safety systems (e.g., longitudinal and lateral collision avoidance, intersection collision avoidance, vision enhancement and safety readiness). The National Program Plan will become final and will be released at ITS America's Fifth Annual Meeting in Washington, D.C. from March 15 through March 17.

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Today's creation of TIRS clearly demonstrates this agency's commitment to the continued integration of radio-based technologies into the nation's transportation infrastructure and our commitment to the development and implementation of the nation's intelligent transportation systems of the future.

Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, FCC 95-41 (February 6, 1995) at paras. 5-6. In the Notice of Proposed Rulemaking in ET Docket 94-124, the FCC again acknowledged the "promise and importance" of ITS technology, which merits "special consideration" by this Commission. Amendment of Parts 2 and 15 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, FCC 94-273 (November 8, 1994) at paras. 29-30.

In response to the First Notice of Inquiry in this Docket, ITS America identified ITS as a candidate for inclusion on the Agenda for WRC-97. Since that time ITS America has participated in the efforts of Informal Working Group 6 ("IWG-6") of the FCC's Industry Advisory Committee ("IAC") examining candidate topics for inclusion on the WRC-97 Agenda. Indeed, Resolution No. XX2 included within the IAC Interim Report (dated December 20, 1994) recognizes the need to address international ITS spectrum allocations at WRC-97.⁴ Since issuance of the IAC Interim Report, and in response to the efforts of IWG-6, ITS America has revised Resolution No. XX2 for consideration by the IAC. A copy of the revised Resolution is attached to these Comments.

Most significantly, since ITS America's request to the Commission last June, ITU Study Group 8(a) has adopted a Study Question to examine international spectrum allocations for Transportation Information and Control Systems looking towards recommendations concerning those allocations. A copy of that Study Question is attached. These efforts will be chaired by a U.S. representative. The adoption of this Study Question was supported by nineteen member nations of the ITU, and we expect significant international participation in these discussions of ITS spectrum allocations. This topic was also addressed internationally at the First ITS World Congress this past November in Paris, and will again be addressed at the upcoming Second World Congress in Yokohama, Japan in November 1995 and the Third World Congress in Orlando, Florida in October 1996.

⁴ Resolution XX2 employs the term "Transport Information and Control Systems" or "TICS" that has been used by ITU-R Study Group 8.

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Congress has expressed its goal of the early deployment of ITS services in the U.S. as well as its clear intent that the U.S. attain and retain a position of world leadership in the deployment of ITS technologies.⁵ These policy imperatives, in our view, require pro-active U.S. involvement in the international consideration of ITS spectrum allocations which, in turn, mandates that the U.S. advocate the earliest possible consideration of these issues by the ITU, i.e., at WRC-97.

ITS America recognizes, of course, that much work remains to be completed to identify specific recommendations for WRC action on international ITS spectrum allocation issues at WRC-97. This work is well underway, including ITU Study Group 8(a), the development of the ITS system architecture, the newly-completed ITS National Program Plan, the conclusion of FCC Dockets PR 92-235, PR 93-61, ET 94-32, CC 94-102 and ET 94-124, the international discourse at the ITS World Congresses and the many operational ITS field tests that have been funded by USDOT and State Departments of Transportation throughout the nation.

⁵ Many of the ITS user services are increasingly available today. Electronic toll systems, for example, are operational in New York, New Jersey and Pennsylvania (the Interagency Group), Texas, Oklahoma, Louisiana and California. Many more will be operational soon, including systems in Virginia, Massachusetts, Maine and Kansas. Vehicle location and monitoring systems currently in operation that provide today or will enable soon many ITS applications include the Global Positioning Satellite ("GPS") system, multilateration systems in the 902-928 MHz band, Loran-C and other emerging technologies. Highway Advisory Radio ("HAR") systems, variable message signs, cable video and other means of conveying real-time traffic information to the traveling public are an ever more ubiquitous presence on the nation's roadways. Collision avoidance radars are commercially available today, and are employed, for example, in the Greyhound Bus Fleet.

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ITS America, accordingly, supports consideration of international ITS spectrum allocation issues at WRC-97.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Costantino".

James Costantino
Executive Director

Of Counsel:

Robert B. Kelly

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APPENDIX

SPECTRUM BANDS:

ITS America anticipates that development of the ITS system architecture, the completion of the ITS National Program Plan, the completion of ITU-R Study Group 8(a)'s study of international ITS spectrum allocations, the conclusion of FCC Dockets PR 92-235, PR 93-61, ET 94-32, CC 94-102 and ET 94-124, the international discourse at the First, Second and Third ITS World Congresses and other efforts will enable the preparation of the U.S. position on ITS spectrum allocations sufficiently in time for WRC-97.

SERVICE:

ITS America anticipates that some ITS spectrum allocations are likely to be categorized as land mobile services. ITS America anticipates that development of the ITS system architecture, the completion of the ITS National Program Plan, the completion of ITU-R Study Group 8(a)'s study of international ITS spectrum allocations, the conclusion of FCC Dockets PR 92-235, PR 93-61, ET 94-32, CC 94-102 and ET 94-124, the international discourse at the First, Second and Third ITS World Congresses and other efforts will enable the preparation of the U.S. position on ITS spectrum allocations sufficiently in time for WRC-97.

APPLICATIONS:

The ITS National Program Plan calls for the deployment of twenty nine specific ITS user services. These user services generally are defined in seven categories: (1) travel and transportation management (e.g., traffic control, emissions testing and mitigation, en-route driver information); (2) travel demand management (e.g., pre-trip travel information, ride matching and reservation); (3) public transportation operations (e.g., public travel security, public transportation management); (4) electronic payment services (e.g., electronic toll services); (5) commercial vehicle operations (e.g., hazardous material incident response, on-board safety monitoring, automated roadside safety inspection); (6) emergency management (e.g., emergency notification and personal security, emergency vehicle management); and (7) advanced vehicle control and safety systems (e.g., longitudinal and lateral collision avoidance, intersection collision avoidance, vision enhancement and safety readiness). ITS America anticipates that WRC-97 would consider international spectrum allocations related to these user services or to others that may emerge prior to 1997.

PUBLIC INTEREST BENEFITS:

As directed by Congress in ISTEA, the goals of the ITS program are improving traffic safety, reducing traffic congestion, enhancing mobility and capturing economic productivity now lost, improving environmental quality through reduced emissions, particularly in non-attainment areas under the Clean Air Act and enhancing U.S. competitiveness in emerging technology markets.

Experts have estimated that ITS can reduce traffic fatalities by eight percent, or 3,300 lives saved, and 400,000 injuries avoided each year at current traffic levels. ITS is expected to relieve traffic congestion in the U.S. by up to twenty percent in the most heavily traveled corridors, and to alleviate congestion resulting from roadway construction and maintenance and accidents in rural as well as urban areas. The enhancement in economic productivity in the U.S. resulting from the deployment of ITS has been estimated at \$100 Billion annually. Infrastructure investment in ITS over the next twenty years is estimated in excess of \$200 Billion, eighty percent of which will be private sector investment. ITS will generate thousands of new, high technology, high pay jobs.

INTERNATIONAL DISCUSSIONS:

ITU-R Study Group 8 with the support of nineteen member nations has adopted a Study Question concerning international ITS spectrum allocations. ITS America anticipates that the Study Group's efforts will be chaired by a U.S. representative. ITS America anticipates that the Study Group's efforts will be completed in sufficient time to enable the consideration of its recommendations at WRC-97.

OTHER GOVERNMENTAL ACTIONS:

The FCC currently is considering a number of Dockets that concern ITS-related services, including PR Docket 93-61, PR Docket 94-32, CC Docket 94-102 and ET Docket 94-124. ITS America anticipates that these Dockets will be completed in sufficient time to enable consideration of their outcomes at WRC-97.

USDOT has selected the architecture teams led by Loral and Rockwell to continue with Phase II of the Architecture selection. Phase II will be completed no later than mid-1996 and a national ITS architecture will be identified at that time.

USDOT has funded numerous ITS operational tests. Many State Departments of Transportation have also funded ITS operational tests. Many of these tests, including for example the "TravTek" test in Orlando, Florida have been concluded and their results are known; many others will conclude well before 1997. USDOT is expected to continue funding further operational tests.

USDOT has funded a "communications alternatives" study by ARINC to identify and investigate the communications links available for ITS user services. ARINC's study is expected to be concluded in sufficient time for consideration of its conclusions in formation of the U.S. position at WRC-97.

RESOLUTION NO. XX2

Frequency Provisions for Development and Implementation of New Transportation Related Radiocommunications

The 1995 World Radiocommunication Conference

considering

- a) that there is a need to integrate new technologies including radiocommunications into land transportation systems;
- b) that Transportation Information and Control systems are being planned and implemented by many Administrations;
- c) that international standards would facilitate the world-wide implementation of these systems and provide for economies of scale in bringing equipment and services to the public;
- d) that the developments now in progress in different portions of the frequency spectrum may require common frequency bands in the future for efficient frequency utilization;

noting

- a) that the Radiocommunications Sector has adopted Question XX/X, (need title and Number of Question)
- b) that the Radiocommunications Sector is engaged in studies that include the technical characteristics, sharing criteria and spectrum requirements for these systems;
- c) that the Radiocommunications Sector has resolved to complete these studies by 1997;

invites the Director of the Radiocommunications Bureau

to continue as a matter of urgency its studies of the characteristics and spectrum requirements for the Transportation Information and Control system, to make Recommendations as to the technically suitable frequency bands, associated standards and frequency sharing criteria with a view to complete its studies before the 1997 World Radiocommunication Conference;

resolves to give the view

that the agenda of the 1997 World Radiocommunications Conference should be amended to include consideration of the spectrum requirements for the Transportation and Information Communications System and if necessary , modifications of Article 8 of the Radio Regulations;

invites the Council

to include this Resolution in the agenda of the 1997 World Radiocommunications Conference.

ITU Study Group 8(a)

**Study Question
Transport Information and Control Systems (TICS)**

The ITU Radiocommunication Assembly,

considering

- a) that there is a need to integrate new technologies including radiocommunications into land transportation systems;
- b) that many new land transportation systems use intelligence in the land vehicles coupled with advanced management techniques to improve traffic management;
- c) that the technologies planned for TICS can be applied to public transportation (transit) systems to make them more efficient and to enhance the integrated use of all forms of surface transport;
- d) that TICS are being planned and implemented in various Regions by Administrations;
- e) that a wide variety of applications and services are defined;
- f) that international standards would facilitate the world-wide applications of TICS and provide for economies of scale in bringing TICS equipment and services to the public;
- g) that early international harmonisation of TICS would have several benefits;
- h) that world-wide compatibility of TICs may be dependent on common radio spectrum allocations;
- i) that radio is an essential component of TICS,
- k) that the International Organization for Standardisation (ISO) is standardising Transport information and Control Systems (non-radio aspects) in ISO/TC204,

decides that the following Question should be studied;

1. What are the various elements of TICS?
2. What are the overall objectives for TICS with respect to
 - Radio communication requirements; radio interfaces, reliability, grade of service, etc.
 - improvement factors; congestion reduction, safety, control, quality of life, etc.

- type of services?
3. What radio-based TICS services and functions might benefit from international standardization?
 4. What are the spectrum requirements for each element of TICS including;
 - suitable bands
 - spectrum bandwidth needed?
 5. What are the interconnect requirements of TICS with the switched telecommunication networks?
 6. What are the technical factors that effect sharing between TICS and other users?
 7. To what extent can the evolving mobile telecommunications systems be used to deliver TICS services?
- further decides
1. that the results of the above studies should be included in (a) Recommendation(s);
 2. that the above studies should be completed by 1997.